

WHAT WE CLAIM ARE:

1. A semiconductor storage device comprising:

a plurality of memory cells formed on or over a surface of a semiconductor substrate;

5 a plurality of word lines formed on or over the surface of the semiconductor substrate, each of the word lines being connected to some of the memory cells and selecting memory cells connected to the word line upon application of a select signal to the word line;

a plurality of bit lines disposed in a second wiring layer above a first  
10 wiring layer in which the word lines are disposed, the bit lines extending along a direction crossing the word lines, each of the bit lines being connected to some of the memory cells and applied with a signal read from the memory cell selected by the word line;

a plurality of signal wiring lines partially superposed upon the bit  
15 lines and disposed in a third wiring layer above the second wiring layer; and

a conductive shield layer disposed in a fourth wiring layer between the second and third wiring layers, the conductive shield layer including there-  
inside the bit lines in a first area including an area where the bit lines and the  
signal wiring lines are superposed upon each other, as viewed along a direction  
20 vertical to the surface of the semiconductor substrate, openings being formed  
through the conductive shield layer in areas where the bit lines are not disposed.

2. A semiconductor storage device according to claim 1, wherein the openings  
are disposed in areas which are not superposed upon the signal wiring lines.

25

3. A semiconductor storage device according to claim 1, further comprising a power source wiring line and a ground wiring line formed on or over the semiconductor substrate, wherein the shield layer is connected to the power source wiring line or the ground wiring line.

5

4. A semiconductor storage device according to claim 2, further comprising a power source wiring line and a ground wiring line formed on or over the semiconductor substrate, wherein the shield layer is connected to the power source wiring line or the ground wiring line.

10

5. A semiconductor storage device according to claim 1, further comprising a constant voltage generator formed on or over the semiconductor substrate, wherein a constant voltage generated by the constant voltage generator is applied to the shield layer.

15

6. A semiconductor storage device according to claim 2, further comprising a constant voltage generator formed on or over the semiconductor substrate, wherein a constant voltage generated by the constant voltage generator is applied to the shield layer.

20

7. A semiconductor storage device comprising:

a plurality of memory cells formed on or over a surface of a semiconductor substrate;

a plurality of word lines formed on or over the surface of the semiconductor substrate, each of the word lines being connected to some of the

memory cells and selecting memory cells connected to the word line upon application of a select signal to the word line;

a plurality of bit lines disposed in a second wiring layer above a first wiring layer in which the word lines are disposed, the bit lines extending along a direction crossing the word lines, each of the bit lines being connected to some of the memory cells and applied with a signal read from the memory cell selected by the word line;

a plurality of signal wiring lines crossing the bit lines and disposed in a third wiring layer above the second wiring layer; and

a conductive shield line disposed in correspondence with each of the signal wiring lines, the conductive shield line being disposed in a fourth wiring layer between the second and third wiring layers and including there-inside a corresponding signal wiring line as viewed along a direction vertical to the surface of the semiconductor substrate.

15

8. A semiconductor storage device according to claim 7, further comprising a power source wiring line and a ground wiring line formed on or over the semiconductor substrate, wherein the conductive shield line is connected to the power source wiring line or the ground wiring line.

20

9. A semiconductor storage device according to claim 7, further comprising a constant voltage generator formed on or over the semiconductor substrate, wherein a constant voltage generated by the constant voltage generator is applied to the conductive shield line.

25